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GEOGRAPHICAL RECORD

AMERICAN GEOGRAPHICAL SOCIETY

Award of the Charles P. Daly Medal. The Charles P. Daly Medal for Geographical Research has been awarded to Professor George G. Chisholm of the University of Edinburgh, Scotland. The inscription on the medal explains the selection of Professor Chisholm for one of the highest awards of this Society in 1917. It reads as follows:

TO
GEORGE GOUDIE CHISHOLM
SCHOLAR, TEACHER, AUTHOR
THROUGH SUSTAINED RESEARCH
AND BROAD GENERALIZATION
HE HAS CREATED A WORLD-WIDE
INTEREST IN THE GEOGRAPHICAL
BASIS OF COMMERCE

Professor Chisholm was one of the first to develop a body of scientific principles in the field of commercial geography and to organize a great mass of economic data. He has presented his material with rare breadth and clearness in a number of standard and widely known publications.

Award of the David Livingstone Centenary Medal. The David Livingstone Centenary Medal has been awarded twice since its foundation in 1913, first to Sir Douglas Mawson and second to Colonel Theodore Roosevelt. A third award has now been made, to Manuel Vicente Ballivian, president of the Geographical Society of La Paz, Bolivia. Señor Ballivian has done more for the promotion of geographical knowledge in Bolivia than any other man in the history of that country. This achievement he has accomplished no less by the encouragement of young men, and especially explorers, than by the broad scholarship displayed in his own researches and by his indefatigable efforts to secure government aid for geographical and statistical work.

NORTH AMERICA

Domesticated Reindeer in Alaska and the Canadian North. Into the eastern and western extremities of North America the domesticated reindeer has been successfully introduced from the proximate ends of the Old World. To Alaska reindeer from the Tungus were first brought in 1892. How well they have thriven and how materially they are helping to raise the status of Innuit and Indian is clearly demonstrated in the reports of the U. S. Bureau of Education, under whose jurisdiction they fall. The current report, that for 1914-15 (*Bur. of Educ. Bull., 1916, No. 47,* Washington, 1917), indicates a continuance of the uninterrupted success that has attended the service since its inception twenty-five years ago. Although nearly 9,000 head of reindeer were slaughtered during the year, the net increase was 21 per cent, and the total herd now numbers over 70,000. Plans are under way for the commercialization of the industry. The trial shipment of meat to Seattle noted in the last report (see the *Geogr. Rev.,* Vol. 1, 1916, p. 228) has been repeated, and a proposal from a cold-storage company to market the meat on a commission basis has been laid before the native owners.

Dr. Grenfell's introduction of reindeer from Lapland into northern Newfoundland made several years later (1908) has likewise proved successful and has benefited greatly the fisherfolk of that inhospitable shore. But a later attempt on the part of the Canadian government met with disaster. In 1911 fifty head of reindeer were purchased from Dr. Grenfell for introduction into the Northwest Territories. The story of this unfortunate experiment is recounted by Emile Miller in a recent article (L'Introduction du renne en Amérique, *Bull. Soc. de Géogr. de Québec,* Vol. 11, 1917, No. 1).

The herd was shipped via Sydney, Cape Breton, to Athabaska Landing, whence it wintered at Fort Chipewyan. At the beginning of the succeeding summer, diminished by nineteen, it was taken to an enclosure in the vicinity of Fort Smith. But the plague of gad-flies so tormented the unhappy beasts that they promptly broke their bounds. Only a dozen were recaptured and one of these died shortly. During the winter the eleven survivors were stabled and fed upon lichens and hay. The diet proved fatal to seven. The remaining four were then moved to an island in Great Bear Lake, where two more succumbed, and the experiment appears to have terminated.

But the impracticability of the acclimation of the reindeer in northern Canada as a whole is not proved thereby. The experiment failed through ignorance or disregard of the character of the natural habitat of the beast. The reindeer can hardly be expected to thrive in a region where the summers are warm enough for wheat cultivation. It is true that in the winter the caribou migrates far south, as the name Reindeer Lake testifies, but in summer return is made to the north. The southern summer limit of the caribou runs approximately from Chesterfield Inlet on Hudson Bay to the northern shore of Great Bear Lake; in the western part it is roughly coincident with the northern limit of trees. The neighborhood of the former point should prove a veritable reindeer paradise. But against introduction here it is urged that only the Yellow-Knives and Dog-Ribs would be benefited. Apart from the ethical argument still favorable to the project, the outposts of civilization would at least gain indirectly. The settlers in the Mackenzie Basin should then find the Indians of the Barren Grounds more desirable neighbors, and by gradual extension of the reindeer westward a practicable route from Great Slave Lake to Hudson Bay could be established.

The Basis for the Official Designation of Lassen Peak. In the February *Review* (p. 148) under the well-chosen heading "The Local Name of Lassen Peak" is given an account of local usage that deserves more than ordinary attention. Local usage is sometimes ephemeral, but in cases involving literature names should not be changed without good reason. The recent volcanic activity of Lassen Peak has given it not only national but international prominence as one in the belt of active volcanoes girding the Pacific. There should be no confusion concerning its name. It may therefore not be amiss to outline somewhat fully the evidence that impelled the U. S. Geographic Board to render its decision in favor of the form "Lassen Peak," as enlarged upon in the *U. S. Geological Survey Bulletin No. 294* (see the December, 1916, *Review*, p. 464).

The rush of gold seekers overland to California in 1848 to 1853 and the Government survey for a railroad route to the Pacific about the same time drew marked attention to all guiding peaks and mountain passes by the way. One of the routes surveyed by Capt. E. G. Beckwith in 1854 traversed Noble's Pass from Susan River to the Sacramento Valley, touching the northern base of Lassen Peak, and in his hachure map of this portion of his route (*Pacific Railroad Survey Repts.*, Vol. 11) Beckwith gives a clear view of Mount St. Joseph, with its radial drainage of Hat Creek, Battle Creek, and the head of Feather River well defined and named. In the text (*ibid.*, Vol. 2) Beckwith mentions Mount St. Joseph a number of times and adds, parenthetically, "sometimes called Lassen's Peak." Note the possessive form and the correct spelling. Beckwith followed the old immigrant road then in use and touched the base of "Black Butte," now well known as the Cinder Cone, of which he gives a brief account. On Beckwith's map Lost Creek is called Wolf Creek, which joins Hat Creek to form what was then called Canoe Creek, the scene of the almost disastrous floods following the great eruptions of Lassen Peak on the night of May 19 and the afternoon of May 22, 1915.

Peter Lassen, the Danish trapper, at the time the railroad route surveys were made, was the most active guide and noted pioneer of the region, and Lassen Peak was well named in his honor. To this all agree, and it is equally apparent that the form Lassen's Peak was the first and only local usage of early mining days. To trace local usage from then till now we must be guided largely by definite records in maps and reports concerning the region.

Among the maps of northern California in the Library of Congress and other large libraries in Washington, D. C., there are at least thirty giving sufficient detail to locate and name the mountain under consideration. On these maps five names are used for the mountain. One map calls it Mount St. Joseph, as already noted; another calls it Lassen Mountain; five call it Mount Lassen; eight Lassen Butte, and fifteen Lassen Peak.

As to Lassen Butte or Lassen Peak, Whitney's statement given below should be decisive in favor of Lassen Peak.

J. D. Whitney, W. H. Brewer, and Clarence King of the California Geological Survey visited the mountain in 1863 and were the first to study and describe its remarkable features. Incidentally in a footnote (California Geological Survey: Geology, Vol. I, 1865, p. 310) Whitney refers to the name of the mountain and remarks: "This is the volcanic mass designated as Mount St. Joseph on the Pacific Railroad maps; but it is universally known in California as Lassen's Butte or Peak; we prefer the English word, especially as the French one is not properly used when applied to a high mountain. A butte, according to the dictionary of the French Academy, is a '*petite élévation de terre*' or a '*petit tertre*'; 'knoll' would be the exact translation."

The local usage of the name Lassen Butte or Lassen Peak that prevailed in Whitney's day appears to have prevailed in a greater or less degree up to the present time. No other names for the mountain appear upon the maps examined that were published before 1884, and this includes not only those of private compilation but also the Government publications, the especially valuable map of the California Geological Survey in 1874, the General Land Office map in 1876, and the Wheeler Survey map in 1879, which is the result of a large amount of field work upon and about Lassen Peak that familiarized the topographer in charge not only with topographic details but also with the local usage of names.

George Sandow made the subdivision survey of Township 30 North, Range 4 East, at intervals from 1871 to 1883, and his township plat was accepted by the General Land Office on March 28, 1884. Lassen Peak stands just outside of the township line on the north side but was included by Sandow in his plat under the name Mount Lassen. This is, as far as I am aware, the first appearance of the name Mount Lassen in public records. The plat shows the rim of an old crater extending as a prominent ridge about three miles to the southwest from Mount Lassen, to what Sandow has called ''South Butte of Mt. Lassen.'' This latter prominence is now known, especially to the Forest Service, as Brokeoff Mountain and is in plain view from the Sacramento Valley.

Apparently as a direct result of Sandow's use of the name Mount Lassen, Keddie of Plumas County, who had previously called the mountain Lassen Butte (1886), changed it to Mount Lassen (1892) on the official map of Plumas County. It should be remembered, however, that the mountain is not in Plumas County, but in Shasta County, to be noted later.

The General Land Office maps of 1885 and 1891 used the name Mount Lassen, but in 1900 and 1913 they apparently returned to Lassen Peak for the mountain within the Lassen Peak National Monument. On the map for 1913, however, a new element of confusion was introduced in applying the name Mount Lassen to what has been already noted as Brokeoff Mountain.

Lassen Peak is in Shasta County, and, on the three maps of that county examined, two contained the name Lassen Butte and the third Lassen Peak. There is but one more state map to which attention need be called, namely, the ''Geomorphic Map of California and Nevada,'' 1908. It was prepared with great care by the Earthquake Investigation Commission, and the names it contains, among which is Lassen Peak, are based on well-considered authority.

The matter of local usage is undoubtedly of great importance in considering the adoption of names. For this reason I may be permitted to refer very briefly to my own experience on many trips into that region during the last thirty-three years. My first ascent of the peak was in July, 1883, and the greater portion of the summers from 1885 to 1893 was spent in that region surveying for the Lassen Peak geological folio. To study the recent volcanic activity of the mountain I made numerous ascents of the peak in the summers of 1914, 1915, and 1916. During the whole of this long experience (1883 to 1916), with abundant opportunities to learn the opinions of the people, local usage as to the name of the peak was carefully noted. A considerable number have called it Lassen Butte, and the name is still used locally in Shasta County, but much the more common local usage throughout the region during 1882-84, when the topographic and geologic surveys were made for the folio, was Lassen Peak. The name Mount Lassen was rarely used in that region as early as 1885.

The publication of the Lassen Peak folio and other reports, including Whitney's of the California Geological Survey on the geology of the region, gave to the name Lassen Peak a definition that fixed it to the mountain more securely than any other name. Its use in designating the Lassen Peak National Monument and the first National Forest of the region gives it a legal status, and when the U. S. Geographic Board was asked for the correct name of the mountain, with the evidence already cited as to the use of the name, it readily decided in favor of Lassen Peak.

There can be no doubt, however, that within the last few years since the recent volcanic activity appeared the local use of the name Mount Lassen has greatly increased, but the name Lassen Peak is still in local use, and prevailingly in general use. Professor R. S. Holway of the University of California and other writers who use names with care, so as to avoid confusion when writings are compared, use Lassen Peak.

The widespread use of the name Mount Lassen is to be found in the newspapers. The volcanic activity of the mountain is reported to the Associated Press and spread all over the country by the *Searchlight* of Redding, an excellent daily that is keenly alive to the best interests of the country. A few months ago a lecturer in Redding concerning the volcanic eruption called the mountain Lassen Peak. He was reminded of local usage, and to correct what is considered a wrong tendency in the press the U. S. Geological Survey issued *Press Bulletin No. 294.* It is gratifying to note that the *Searchlight,* with commendable zeal, now sends out the Associated Press dispatches sometimes, if not always, with the name Lassen Peak, and if other papers would do likewise local usage would soon correct itself and by adopting the name Lassen Peak prevent avoidable confusion among scientific writers.

In closing I wish to emphasize the fact that the name Mount Lassen lacks priority and the authority of general publication. Furthermore, its use has been rendered confusing by being applied, as already pointed out, not only to Lassen Peak but also to Brokeoff Mountain. It is earnestly hoped that the press may exercise its righteous function of safeguarding science by changing local usage from Mount Lassen to Lassen Peak.

J. S. Diller.

Saskatchewan's "Bumper" Wheat Crop of 1915. To the world's record wheat crop of 1915 Canada's prairie provinces contributed a full quota (C. C. James: An Historical War Crop—The Canadian Wheat Crop of 1915, *Trans. Royal Soc. Canada,* Ser. 3, Vol. 10, 1916; for wheat area see map on p. 28 in this number). Saskatchewan, premier of the three provinces in wheat production, alone raised 173,723,775 tons. This record, in part accounted for by increased acreage, is due still more to increased yield following unusually favorable climatic conditions. The favoring circumstances for the 1915 crop began in the previous year. The lightness of the 1914 crop reduced soil depletion and permitted more summer fallowing and fall ploughing, while the latter operation was also encouraged by a protracted period of fine weather. The year 1915 opened auspiciously. The mildest February on record for twenty years was followed by an early spring. Seeding was carried out in fine April weather. In response to the war call for expansion of food resources the area planted was extended to approximately 6,885,000 acres, representing the culmination of a steady progress from the million or so acres under wheat when Saskatchewan was created a province in 1905. Plentiful rains fell in June and early July. For the greater part of the province harvesting and threshing were carried out under "ideal weather conditions," though the heaviness of the crop protracted operations into November in the southwestern region. Yield and quality alike proved high. Against an average yield of 19.5 bushels per acre and a minimum of 12.4 in 1914 the crop of 1915 yielded 25.2, a figure only slightly exceeded in the province by the record of 1901 (*Ninth Ann. Rept. Secretary of Statistics, Dept. of Agric., Prov. of Saskatchewan,* Regina, 1916).

The Glaciers of the Torngat Mountains, Labrador. The highest and also the least-known mountains in eastern Canada are the Torngats (or Torngaks) in the Ungava Peninsula of northeastern Labrador. They have been supposed to reach an altitude of 10,000 feet and to have the distinction of being the highest mountains in North America east of the Rockies. They would have a double distinction if they should be found also to support living glaciers, for the glaciers of other mountains farther south vanished in the remote past. But their height above sea level is probably not more than 6,000 feet, according to the recent studies of Dr. A. P. Coleman, who visited them in 1915 and climbed Mt. Tetragona ("Mt. Tetragona: A First Ascent in Labrador," and "The Building of the Torngats," *Canadian Alpine Journ.,* Vol. 7, 1916, pp. 5-11 and 67-70). Dr. Coleman did find many small living glaciers, but, if correct, his estimate of the height of the highest summit—about 6,000 feet—leaves Mount Washington in New Hampshire (6,290 feet) the highest peak east of the Rockies.

The Torngats are wholly without timber. They break down so abruptly to sea level on the east (probably a fault-line scarp), and their relief is so rugged, that they have an extraordinarily bold and impressive seaward aspect, in spite of the presence of considerable remnants of a former domed surface that has survived erosion on the landward side. This domed surface was a preglacial plateau—once part of the extensive and well-known Laurentian peneplane—now greatly dissected by local glaciers which have diminished in length until at the present time they occupy, with their tributary snowfields, very limited areas at the bases of the cirque walls. The glaciers are still at work in the higher cirques and valleys, but none seems to be very active. Formerly they were large and powerful and cut great valleys with sharp-crested ridges and bold isolated mountains between. In some places the main lines of ice drainage afforded outlets to the sea for the great Labrador ice sheet of the past, just as the marginal tongues of the inland ice of Greenland flow to the sea in troughs cut across the rugged coastal belt.

SOUTH AMERICA

A Campaign Against Malaria in Peru. The Peruvian Government is instituting a campaign against malaria, a disease that, under the unsanitary conditions generally existent in Peru, forms a serious obstacle to progress in some of the most promising sections of the country (*South American Journ.,* April 7, 1917, p. 301). Certain parts of the coast valleys are prone to malaria in the latter part of the summer season, when subsiding floods and maximum temperatures supply optimum conditions for the disease carriers. In the past Lima and all the lower Rimac valley have been notorious for their intermittent fevers. This insalubrious spot was one of the localities to which criminals were despatched in Inca days. Though conditions in the city have improved of late the outskirts still possess a bad reputation (Ignacio La Puente: Paludismo en la costa del Perú, *Bol. Soc. Geogr. de Lima,* Vol. 31, 1915). Still more serious is the disease in the deep-cut valleys that penetrate the heart of the plateau. There malarial conditions flourish the year round, merely augmenting somewhat at the beginning and end of the rainy season. The phenomena in the Marañon valley have been described by Raimondi (''El Departamento de Ancachs,'' Lima, 1873).

In prosecution of the campaign the Peruvian Government proposes to import, duty free, the necessary quantity of quinine. The statement is an interesting reminder both of the lack of industrial development in Peru and of the still unutilized resources that wait more favorable conditions for exploitation. The *montaña,* the lower slopes of the Eastern Andes from Ecuador to Bolivia, is the native home of the cinchona species. Once Peru and Bolivia exported large quantities of the ''Peruvian bark,'' though the drug was never fabricated. Of recent years even export of the crude article has practically ceased: it cannot compete with the better circumstanced product of the East.

The Age of the Bolivian Andes. In a paper of only three pages (E. W. Berry: The Age of the Bolivian Andes, *Proc. Natl. Acad. of Sci.,* Vol. 3, pp. 283-285, April, 1917) there are announced some remarkable fossil evidences which confirm recent physiographic conclusions as to the late Tertiary and early Pleistocene uplift of the Central Andes. Fossil plants at Corocoro (13,000 feet) and Potosí (14,000 feet), which include a fern and tropical trees allied to those now living on the Amazon lowlands, denote a more humid climate and a far lower elevation, and, the author says, ''the sea deposited a part of these strata [on the Bolivian highland] in late Tertiary or Pleistocene time, and since that time there have been differential vertical movements amounting to a minimum of 13,500 feet.'' The author concludes: ''There is, then, definite evidence that parts of the high plateau and of the eastern Cordillera stood at sea level in the late Tertiary.''

In various papers in past years Bowman has demonstrated the rapid and recent uplift of the Central Andes and more recently in ''The Andes of Southern Peru'' (1916) has elaborated a physiographic argument, based on detailed topographic surveys in southern Peru, which concludes that an uplift of at least 7,000 feet is demonstrable and that it may have been much more. The convergence of the physiographic and the fossil evidence is singularly conclusive, and the full report on the fossil evidence may be expected to form one of the major contributions to the physiographic history of the Andes within the decade.

Changes in the Character of the Precipitation in British Guiana. A recent critical examination of past meteorological records relating to Georgetown, Demarara, has led to some interesting results, especially with regard to rainfall. The observations under consideration included an earlier series for the period 1846-56, taken in the Observatory, and a later series for 1882-1915, taken at the Botanic Gardens. The later series was divided into three sub-groups, and the average annual rainfall characteristics of the four periods thus obtained were worked out in detail. While the average annual rainfall for the four periods shows the fluctuation to be anticipated, the character of individual rainfalls is marked by a steady progressive change in the direction of greater frequency and diminished intensity. This appears in the following table.

PERIOD	DAYS OF RAIN				RAINFALL IN INCHES
	<½ in.	½-2 ins.	> 2 ins.	Total	
1846-1856........	114	54	9	177	95.86
1882-1896........	126	53	8	187	93.57
1897-1906........	150	50	6	206	89.86
1907-1915........	164	48	6	218	99.92

These figures are given in the 1915 report on British Guiana by the British Colonial Office (*Ann. Colonial Repts. No. 910,* London, 1916). The examination of the meteorological records referred to above was incident on a change in the form of the annual publications. Whereas the detailed report formerly appeared in the Blue Book for the colony, it will now be incorporated in the Annual Report of the Meteorological Division of the Department of Science and Agriculture and the record in the Blue Book will be confined to a fairly full summary.

A New Publication of the Argentine Meteorological Office. With the month of January, 1916, the Argentine Meteorological Office began the issue of a monthly bulletin. This is a quarto publication, and the first number contains 40 pages, with six maps and one diagram. The plan of the *Boletín Mensual* is to supplement the regular data given on the daily weather map by means of more complete and more accurate information than is obtainable by telegraph. The tables are unusually complete and give the monthly summaries for 75 stations, thrice-daily observations for 23 selected stations, and rainfall data for 1,421 stations. A series of excellent charts show the total rainfall for the month, the excess and deficiency of the monthly rainfall in relation to the normal, the total rainfall from July 1 to January 31, the excess and deficiency of the rainfall from July 1 to January 31 in relation to the normal for that period, the mean temperature, pressure, and the prevailing winds for the month, and the absolute maximum and minimum temperatures for the month. The new *Boletín Mensual* maintains the high standard of all the publications of the Argentine Meteorological Service. The February, 1916, number of the *Boletín* contains, in addition to the matter above noted, a summary of the weather of the month by Mr. H. H. Clayton, the Chief of the Forecasting Division. R. DEC. WARD.

EUROPE

Soundings as an Aid to Navigation in Approaching the French Coast. A recent communication dealing with methods of recognizing an unlighted coast from a ship nearing land in foggy weather is of particular interest in these war days (J. Renaud: Les atterrages, en temps de brume, des grands ports français sur l'océan Atlantique, *Comptes Rendus de l'Acad. des Sci. de Paris,* June 11, 1917). In favorable weather the outline of the coast enables the mariner to determine the location of the port for which he is bound. Whenever the visibility is low, however, an easy way of ascertaining the ship's position, once land is sighted, is to take soundings and bottom samples and thus to identify one's position on the chart. The example is given of a vessel bound for Havre from a port in North America and traveling continuously under a clouded sky which prevents the officers from taking astromonical observations. At the entrance to the Channel soundings will enable the captain to determine his position. The depth decreases here in a fairly uniform manner. Nearing the French coast the vessel would keep its course in waters exceeding 16 fathoms (30 meters) in depth, thus rounding the Pointe de Barfleur and entering the estuary of the Seine, where the depths begin to decrease. By hugging the southern shore of the estuary it is possible to reach the Havre anchorage with the sole aid of bathymetric data.

Near Brest the bottom is rough and dangerous. While the making of this port shortens transatlantic trips by five to seven hours, the time saved can hardly be reckoned as a compensation for the numerous shoals and rocks which beset the approaches. In war times, of course, these obstacles are favorable to the defence. Farther south, between Penmarch and the mouth of the Gironde, there is very little difficulty in estimating the ship's position by means of soundings. The bottom of the sea here slopes uniformly towards the region where oceanic depths begin. A wide deposit of ooze helps furthermore in detecting this locality. By exercising ordinary caution a ship can proceed landward from a depth of 164 fathoms (300 meters) until the 27-fathom (50 meter) line is reached. Beyond that, soundings alone do not suffice, as is the case at the mouth of the Seine. Only La Pallice, the harbor of La Rochelle, can be made by soundings, by proceeding along the south wall of the Antioche deep.

In war times, when lights are frequently extinguished along the coast, these undersea determinations are of the utmost importance and testify to the great value of detailed oceanographic investigation.

The Distribution of Italy's Power Resources. Italy's position in the war is greatly affected by her scarcity of fuel. The Italians, taken as a whole, are farmers rather than manufacturers. At the same time the high development which technical science has attained in Italy tends to force the country into the ranks of industrial producers. In taking stock of their power resources, Italians found that their northern provinces contained lignite beds which were susceptible of development. From 600,000 tons produced in 1913 the output was increased to 1,200,000 in 1916. According to information from F. T. F. Dumont, American Consul at Florence (*Commerce Repts.,* May 24, 1917), this quantity is estimated to be the maximum which can be obtained from the Italian beds. Other sources of energy will have to be utilized; and attention is being turned to forestry and water power.

Italy's forests cover a scant 13 per cent of the peninsular area. Deforestation has been excessive, particularly in the south. The power to be developed from this source is negligible. As an offset to this disadvantage the streams of northern Italy, especially in the Provinces of Piedmont, Lombardy, Venice, Tuscany, and the Abruzzi, contain potential energy which has been estimated at 5,000,000 horse-power. Less than one-fifth of this amount is now available. The development of this energy would free Italy from dependence on foreign coal.

The situation as regards power in Italy is therefore related to developments in the northern districts. In the hydro-electric field the mechanical energy to be obtained is transmissible as far south as required.

Hydro-electric Power in Russia. An official estimate places the potential value of Russian water power at not less than 12,000,000 horse-power, of which today only 10,000 horse-power is being utilized. The calculated resources lie chiefly in the mountainous regions of Asiatic Russia, far from centers of industry, but there also exists a considerable resource in the glaciated lake area adjoining Finland on the east that could be put to immediate use. The lately completed railroad line from Petrograd to Kola and Catharine Harbor (see ''Russia's Wartime Outlets to the Sea'' in the *Geogr. Rev.*, Vol. 1, 1917, pp. 128-132; also *Commerce Repts.*, 1917, No. 28) might be electrified, at least in the section across the Kola Peninsula. While the line is today of predominantly military importance it has prospects for an economic future. Some day the thousands of square miles of virgin forest covering the region traversed by the railroad will be exploited and its water powers will undoubtedly be in demand (Charles Rabot: La Houille Blanche en Russie, *La Nature,* March 31, 1917).

AFRICA

Economic Exploration in French West Africa. M. René Chudeau, who in 1913-14 carried out an extensive exploration on the eastern margin of the Djouf, one of the sand areas of the Sahara, is reported to have returned from another Saharan journey (*Bull. Soc. de Géogr. de Paris,* Vol. 38, 1916, No. 7-9, pp. 454-455; on the 1913-14 journey, see ''L'Azaouad et le Djouf,'' *La Géogr.*, Vol. 30, 1914-15, pp. 417-436, with map, 1:200,000, and other articles cited therein). This last journey, accomplished under the auspices of the Colonial Office and the Geographical Society of Paris, was designed to investigate the economic possibilities of that portion of Upper Senegal traversed by the railroad from Kayes to the Niger. M. Chudeau brings back an entirely favorable report. Irrigation has made considerable advancement. Lake Faguibine, west of Timbuktu, nearly desiccated during recent years, has been almost completely refilled, thanks to skillful engineering works supplemented by the winter flood of 1915. The future of the cattle industry is also bright. Already some 100,000 head of cattle are brought to market from the neighborhood of the forestal zone. A cold storage and packing plant has already been established, and the erection of others is projected.

The Diary of a Trader in South Africa. Through the generosity of Mrs. Mary L. McKiernan the Society has come into possession of the manuscript diaries and notes of her husband, Gerald McKiernan, who made a number of extremely interesting trading journeys in South Africa from 1874 to 1879. The record covers three main journeys: a hunting and trading trip in Damara Land and Ovambo Land (1875-76); an expedition to Lake Ngami (1877-78); and a trip to the Okavango River (1878-79).

The journey from Walfish Bay northeastward across the Kalahari Desert to Lake Ngami is of chief interest. The wagon route led from water hole to water hole along the beds of streams, across the great ''thirst,'' as the Kalahari is often called, and so to the marshes and mud flats of the lake. Trade was by barter, the bullock carts taking in general merchandise and bringing out ivory. There are vivid descriptions of the native life about Lake Ngami and its tributary streams, the trade in maize, and the strange isolated life of the hunters and traders of every sort who at great hazard made long trips to remote and unexplored districts, where a highly profitable trade was often possible. There are also admirable descriptions of the incredibly immense herds of wild animals that grazed on the undisturbed grasslands north of the Okavango River in the region that corresponds in character and position with the Sudan on the northern edge of the tropical forest of Central Africa. From South Africa bands of Boers trekked northward, trading at native commercial centers, stopping now and then to grow a crop of grain or vegetables or waiting in bands of one or two hundred in some good hunting spot until the rains came and the next ''thirst'' became possible to cross. The traders were in occasional contact with them all the way from Ngami northward to Portuguese West Africa.

Among published accounts by other traders and travelers is one by C. J. Andersson which covers nearly the same region (''Lake Ngami, or Explorations and Discoveries during Four Years' Wanderings in the Wilds of Southwestern Africa,'' New York, 1856). He and Galton tried to reach Ngami from Walfish Bay in 1851 and failed, but in 1855 Andersson went again by the same route and succeeded. It will be remembered that Livingstone discovered the lake in 1849, rumors of it, heard years before, exciting great interest among geographers. The long-delayed discovery of the lake is all the more remarkable in view of the fact that the Orange River had been discovered as early as 1760 and that in 1761-62 a well-equipped exploring expedition penetrated the interior of the Nama country farther north. Still farther north went an expedition in 1791-92 and brought back information about the Damara country. The diary of the first of these two expeditions is now in the British Museum (The Geography of South-West Africa, by H. Schlichter, *Scottish Geogr. Mag.*, Vol. 7, 1891, pp. 471-472 and 513-524, with bibliogr.). For a map of Lake Ngami and an authoritative summary of the work of Livingstone and others in the region see ''Livingstone and the Exploration of Central Africa,'' by Sir H. H. Johnston (London, 1912, p. 101). Its discovery led to numerous efforts to reach it from other directions and to deal with the natives who lived about it and whose stocks of ivory attracted many traders. The lake is an important focus of native life, as shown especially well on a map by Passarge (Die Buschmänner der Kalahari, Berlin, 1907, p. 19).

McKiernan's account, begun but one year after Livingstone was laid to rest in Westminster Abbey, is of distinct value and should be published for wider distribution. It is a source of reliable data and mirrors with great faithfulness the wild life and the people of a frontier region still awaiting its full development. Unfortunately McKiernan was never able to complete his notes, though they cover the most interesting parts of his experiences. The sickness and privations undergone in Africa so affected his health that he was an invalid for many years and died at Altoona, Pa., on June 3, 1892.

POLAR REGIONS

The Latest News of the Crocker Land Expedition. Through a message brought from Greenland to Copenhagen by Surgeon H. J. Hunt and cabled thence to America by the United States Minister to Denmark, direct word has been obtained from MacMillan, leader of the Crocker Land Expedition. He gives an interesting report of his latest journey over glacier-capped islands and across sea ice west of Etah, his base camp, to his farthest point, 103° W. on Finlay Island. The journey covered 1,350 miles and occupied 56 days. The accompanying map gives the route as nearly as can be shown from the brief cabled report.

It is most encouraging, after the many misfortunes that have befallen the expedition, to have so promising a report of actual results accomplished. The determination of the geographical positions of new islands, and of hitherto uncharted portions of coasts, known only through distant sights by much earlier explorers, is a real contribution. And if the published accounts are correct in assigning a latitude of 78° 18′ to the large island just east of Amund Ringnes Island, some of our best maps of this region will have to be remade. Among the more important results achieved in the journey across Ellesmere Island are observations on the extent of the glacier ice, the abundance of game, and the existence of ''much coal.'' The party traveled from Ellesmere Island to Cape Southwest at the southern end of Axel Heiberg Island and thence westward to Amund Ringnes Island and finally to Finlay Island, where game became scarce and the lack of dog food compelled a return. Finlay Island and adjacent land masses are reported to show evidences of recent uplift on all shores—a valuable observation when ultimately shown on the maps of the expedition, since it will give us an important basis of comparison with the raised beaches and terraces of northwestern North America and particularly Labrador. The extent of the rise of the land since the removal of the great ice load of glacial times is one of the significant current problems of glaciology.

A third relief ship has sailed, and the news from MacMillan confirms the wisdom of that plan, for MacMillan says that there is food enough to last only until August, after which, should no relief come, the party would have to adopt the Eskimo style of living. Captain Robert A. Bartlett is in command of the third relief ship, the *Neptune*, a steam sealer especially chartered for the purpose, which left New York late in June with more than a year's provisions. Under his competent direction the safe and early return of the expedition is assured.

Dr. Hunt arrived in New York on June 20 and gave details of his own trip. In company with Ekblaw he went from Etah as far as South Upernivik, where Ekblaw remained. From South Upernivik Dr. Hunt traveled only with Eskimos and from Egedesminde to Holstensborg the journey was made by kayak. At the latter place he took a steamer to the Faroe Islands and Copenhagen, returning to this country via Christiania.

Dr. Hunt's journey over the thin ice of Melville Bay was unusually perilous, and the whole sledge trip of 1,400 miles, lasting from December 18, 1916, until April 16, 1917, was no less than an heroic achievement. Polar bear and narwhal meat was obtained from Eskimo caches. At night the party camped under the lee of icebergs. Five of the dogs died of starvation.

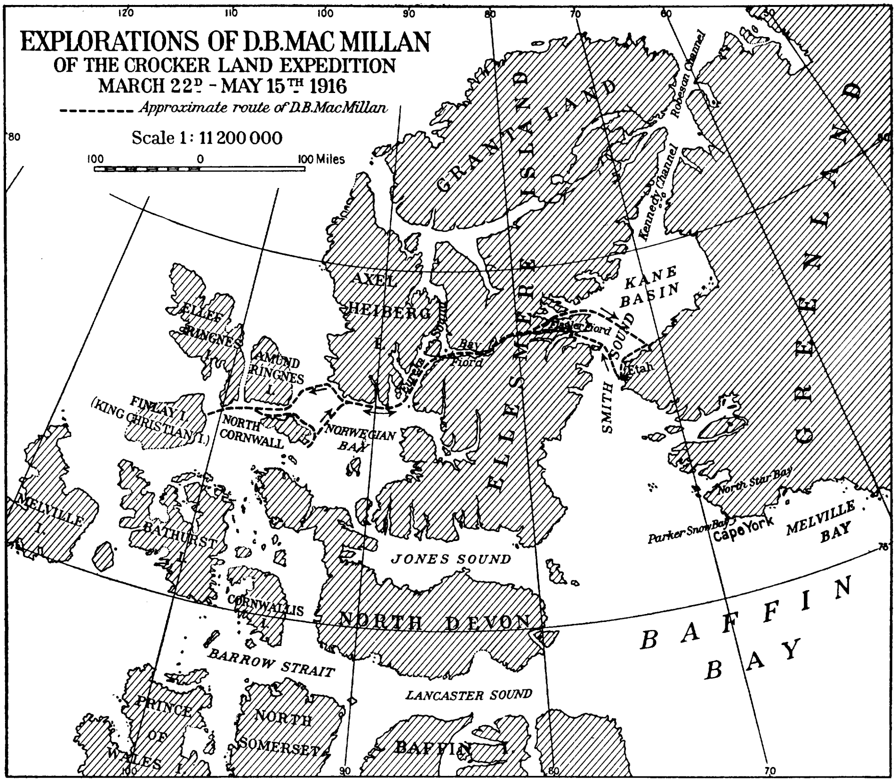

FIG. 1—Sketch-map showing the route of D. B. MacMillan of the Crocker Land Expedition, March 22 to May 15, 1916. Scale, 1:11,200,000.

It is clear from Dr. Hunt's report that the whole account of the hardships, explorations, and scientific results of the expedition will be full of interest and an adequate recompense for the trials and disappointments of the party in carrying out plans in the face of great difficulty.

HUMAN GEOGRAPHY

Early Cultural Migrations and Their Criteria. Under the title of "Ships as Evidence of the Migrations of Early Culture" (reprint from *Journ. Manchester Egyptian and Oriental Soc.*, 1915-16, 42 pp.) Dr. G. Elliot Smith again attacks the problem of the spread of early cultures. Among his numerous publications on this subject two recent papers may be mentioned: "The Origin of the Pre-Columbian Civilization of America" (*Science*, Vol. 44, 1916, pp. 190-195, with map) and "On the Significance of the Geographical Distribution of the Practice of Mummification: A Study of the Migrations of Peoples and the Spread of Certain Customs and Beliefs" (*Memoirs and Proc. Manchester Lit. and Philos. Soc.*, Vol. 59, Part II, 1915, No. 10, 143 pp., with maps).

Dr. Smith is a brilliant and facile writer who scores a point every time he crosses swords with an opponent; and he never writes a dull line. But his essays are strongly reminiscent of the slam-bang type of scientific discussion in vogue in America a half century and more ago when scientific writings were largely polemic in nature: ''puerile and unsatisfying'' as the fetish of an African negro are the arguments of an opponent, or ''childish subterfuges''! But the arguments of Dr. Smith are forensic and legalistic; his conclusions are not judicial. When an opponent (in a *scientific* debate) uses the phrase ''burden of proof'' it suffices not to reply, through the medium of strictly *a priori* argument, that the burden of proof rests on him. The burden rests equally upon both, who should abandon argumentation for facts and forsake counter-attack for well-reasoned deduction. It is the truth and not the frenzy of battle which the scientist cares to see.

If one start with the theory that ''man has ever groped in the dark'' and that similarity of invention, of ritual, and of ''bizarre practices and beliefs'' among widely separated peoples is conclusive proof of a common origin in some strangely endowed central group, then there is no difficulty whatever in ''proving'' that Egypt was the point of origin for the reed *balsa* on Lake Titicaca, the megalithic ruins of Easter Island, and the practice of mummifying the dead in India. Granted that the opposing theory of ''the similarity of the working of the human mind'' is ''a soporific drug against the need for mental exertion'' it does not establish Dr. Smith's theory to have his opponent's theory destroyed. The reader inevitably shares the author's amazement over some of the stupid replies which critics have made to his contentions; but the beam in Dr. Smith's eye is only too apparent to the bystander, as when he says (to take one of many similar illustrations) there is ''no room for doubt that the Burmese type of ship was actually modeled on the plans developed in Egypt in the Pyramid Age.''

No one who has lived among the Polynesians and the Amerinds will deny cases of striking ethnological resemblances between Polynesians and Malayans on the one hand and between the Indians of Mexico and Peru and the people of Eastern Asia on the other. But anthropogeographical science is not promoted by the mere assertion of such resemblances. Every traveler makes the observation. But what are the convergent facts? Is it not cogent to say that the time required by the people of the New World to domesticate maize, the potato, and the llama and develop a wonderful originality of design in weaving was long enough to enable them to learn terraced irrigation and that dried reeds tied in bundles will float a man? Is a granite cliff less suggestive to the primitive mind in developing a wall of trimmed rock for defence or shelter than a faint ancestral memory of great hewn stones on a remote Pacific island?

The world would indeed be too small to hold the books required to advance science if the human mind depended exclusively upon those circuitous methods of thought which we have outlined. There is so much of erudition and vital truth in this paper that we who have far less imagination and argumentative power wish Dr. Smith had more.

GEOGRAPHICAL NEWS

The Growth of General Geographical Interest and the War. Serious interest in geography has been greatly increased by the war, as readers discover the geographical basis of military campaigns, the meteorological aspects of airplane work and scouting in general, and the necessity for persistent map study to understand the sequence of battles and campaigns over extended fronts in widely separated localities. Never before has there been so great a demand for really authoritative and scientific articles on war problems of current importance. This interest is undoubtedly permanent and will develop still more after the war, when new commercial relations become established and foreign lands again attract the traveler and the commercial explorer.

The development of general interest as manifested through the activities of this Society is marked by rapid growth in numbers (the membership has trebled in less than a year), through a vastly increased correspondence, and through a steadily rising standard of literary style and scientific content on the part of contributors to the *Geographical Review.*

"Travel," published by the Travel Club of America, is now one of the best of the illustrated popular magazines. Its octavo size permits excellent reproductions of large-scale photographs, and its enterprising editors are securing some of the best available material on the scenic aspects of travel. The June number is typical; three articles are especially noteworthy:

Mukuntuweap: A Desert Yosemite, by Guy Elliott Mitchell
Along the Columbia River Highway, by Mark Woodruff
Denver's Romantic Mountain Parks, by Edgar C. MacMechen

The Travel Club of America aims to make the world more widely known through the media of photographs and popular descriptive accounts. Its success indicates not only an energetic management but also a sound guiding principle in the popular education of the time.

PERSONAL

ASSOCIATE PROFESSOR N. A. BENGTSON of the University of Nebraska will devote three months this summer to geological reconnaissance work in the foothill region of the Rocky Mountains in Montana, Wyoming, and Colorado and in the adjacent portion of the High Plains.

PROFESSOR ELIOT BLACKWELDER of the University of Illinois is at present in California as a geological member of an advisory commission appointed by the Governor of California to investigate the petroleum resources of the state, their production and utilization. Beginning late in July Professor Blackwelder expects to spend six or eight weeks in the Laramie Range in southeastern Wyoming with a class of graduate students.

PROFESSOR J. E. CHURCH, JR., of the Department of Meteorology of the University of Nevada, has just completed two publications, one on "Snow Surveying: Its Problems and Their Present Phases" and the other on "The Evaporation of Snow." A third publication, on "The Relation of Mountains and Forests to the Conservation of Snow," will be issued in the winter. Professor Church has also begun, in co-operation with the U. S. Reclamation Service, an investigation of the relation of weather to run-off.

PROFESSOR F. E. CLEMENTS of the University of Minnesota is in the West and will devote the summer largely to grazing problems in connection with the national emergency. Incidentally he hopes to complete the task of securing material for a monograph he is planning to write on the bad lands.

DR. O. E. JENNINGS of the Carnegie Museum of Pittsburgh will spend the summer in botanical exploration and collecting along the eastern shore of Lake Nipigon, the large lake in Ontario immediately north of Lake Superior, and thence eastwards to Long Lake, some sixty miles distant.

ASSISTANT PROFESSOR WELLINGTON D. JONES of the University of Chicago has returned from his trip to the Far East (see the *Geogr. Rev.*, Vol. 2, 1916, p. 75). The main purpose of the trip was to gain a first-hand knowledge of the essentials of the geography of eastern Asia. Dr. Jones traversed the length of the Japanese Islands from central Yezzo to Kiushiu, Korea from south to north, and southern Manchuria, including the Liaotung Peninsula. In China Dr. Jones went from Peking to Kalgan up onto the edge of the Mongolian Plateau for a few days trip. Dr. Jones then traversed China from north to south from Peking to Canton, with a side trip to Taiyuan in Shansi Province. South of Hankow the route led up the Yangtzekiang and through Tungting Lake and up the Siang River to Changsha, whence Dr. Jones continued overland along the line of the proposed railway. Some work in the delta region of the Sikiang between Canton and Hongkong followed, then a steamer trip from Hongkong to Shanghai and a few days in the Shanghai region of the Yangtzekiang delta.

MR. THOMAS H. KEARNEY of the Bureau of Plant Industry of the U. S. Department of Agriculture expects to continue during the present summer, in co-operation with Dr. H. L. Shantz of the U. S. Department of Agriculture, the studies of native vegetation as an indicator of the agricultural capabilities of land in the western states which have been in progress during the past five or six years. Detailed investigations of this subject have been made in the Great Plains region (eastern Colorado), in the Great Basin region (Toole Valley, Utah), and in the Southwestern Desert region (Cahuilla Valley, Cal., and Salt River Valley, Ariz.). In all of these localities close correlations have been established between the natural plant associations, the physical characteristics of the underlying soils, and their relative capabilities for crop production under irrigation or by dry-farming methods. Reconnaissance work in other parts of the Great Plains, the Inter-Mountain region, and the Southwestern Desert region have indicated that the correlations worked out in detail in the localities mentioned will hold good over extensive areas with comparatively slight modification. It is believed that these investigations have furnished a method for the rapid and accurate classification of untilled land in the more arid portion of the United States with respect to its possible agricultural value. During the present season these investigations will be continued in southern Arizona and probably in New Mexico, Oregon, and Washington.

Dr. David Randall-MacIver, late librarian of this Society, has for some time been at the front with the British Army in Greece.

Mr. J. B. Tyrrell, mining engineer of Toronto, at one time connected with the Geological Survey of Canada, expects to spend part of the summer in the mining district north of the Saskatchewan River in Manitoba.

Dr. T. Wayland Vaughan of the U. S. Geological Survey has been in charge during the past year, for the Smithsonian Institution, of the preparation of memoirs to be published as a result of a co-operative arrangement made in 1912 between the U. S. Geological Survey, the Smithsonian Institution, and the Isthmian Canal Commission for the prosecution of geological investigations in the Canal Zone and adjacent areas in Central America. Dr. Vaughan has completed the following monographs: ''Corals''; ''The Biologic Character of the Sedimentary Formations of the Canal Zone and Adjacent Areas in Central America'' (with D. F. MacDonald); and ''The Geologic Correlation of the Sedimentary Geologic Formations of the Canal Zone and Adjacent Areas in Central America and Their Bearing on the Geologic History of the Perimeters of the Gulf of Mexico and the Caribbean Sea.'' As one in this series of publications Dr. D. F. MacDonald, geologist of the Isthmian Canal Commission, has completed a comprehensive monograph on the physiography, stratigraphic, structural, and economic geology of the Canal Zone and adjacent areas.